VZ200 COLOR COMPUTER

VZ200 INTERFACE - THE OFFICIAL MAGAZINE
OF THE VZ200 USERS' CLUB

INTERFACE

WELCOME

Welcome to this first issue of VZ200 INTERFACE, the magazine for members of the VZ200 Users' Club. We'll be using the magazine as a way of keeping you in touch with developments in the field, reviewing software packages and printed listings, and sharing members' discoveries and ideas.

We want to help you make the most of your color computer, and we need you to help us and other club members. I'd like you to send me any discoveries you make about the computer, or tricks you find you can make it carry out. If you've found an unusual way to use the color to enhance a program, or a clever sound routine, send it to us, so we can share it with other club members.

As well, we'd like to see complete programs, so they can be printed here in the magazine for other members to run. And if you decide to start a local branch of the VZ200 Users' Club, let us know, so we can publicise your name and address. We hope that there will soon be several local clubs, to arrange meetings for members, and to share ideas and programs.

If you have problems, get in touch with us. Note that we are <u>not able to reply to letters personally</u>, but will print the most representative problems we receive, along with an answer for you.

If you don't want to organise a local club, but would like to get in touch with members of the national club in your area to swap your programs, and to help each other out, write to us, and we'll print your name and address in a future issue so people can get in touch with you.

THREE COMPUTER BOOKS FREE!

The person who submits the best program for our next issue will receive a complimentary copy of my 390-page book THE GIANT BOOK OF COMPUTER GAMES, plus two other books which I hope you will find useful. So get writing. We'd prefer programs sent as listings, but will accept copies on cassette. No material can be returned. If you send your program in on cassette, please save it three times in a row, at the start of the first side of the cassette, so we don't have to do a lot of searching to find it. We ask for it to be dubbed three times to make sure that we can load it.

See you in the next issue,

TIM HARTNELL,
Club co-ordinator

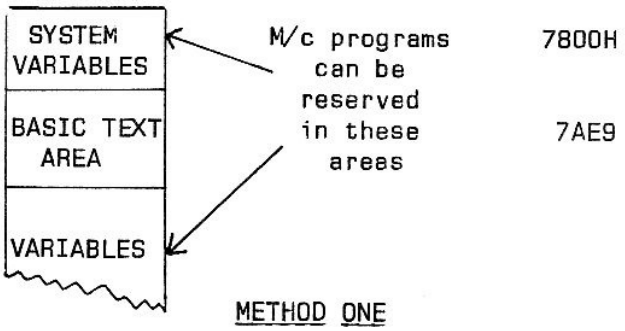
Club co-ordinator,
Tim Hartnell

PROGRAMMING CONTACTS WANTED!!

Sixteen-year-old club member Neville Predebon (72 May Street, West Preston, Vic., 3072) would like to hear from other club members around his own age, to share VZ200 programs and ideas.

RESERVING SPACE FOR MACHINE CODE PROGRAMS

There are two ways to reserve space for a machine code program. The first one is to reserve a space for the program between the system variables area and the BASIC text area. The second one is to reserve the space between the BASIC text area and the variables area.



METHOD ONE

This method reserves a space for a machine code program by moving the start of the BASIC pointer downwards. Hence, a space between the system variables and the BASIC text will be reserved.

Space can be reserved by modifying the pointers of the BASIC interpreter through the program POINTER which is listed here:

```
5 REM POINTER
10 POKE 31568,0
20 POKE 31569,0
30 POKE 31570,0
40 POKE 30884,81:REM MOVE START OF BASIC POINTER TO 7B51H
50 POKE 30885,123:REM THIS WILL RESERVE 103 BYTES FOR M/C
60 POKE 30969,83
70 POKE 30970,123
```

Now pointers can be saved, edited and run as usual. However, since the pointers are modified, the program POINTER listed here must be loaded from tape, and run every time the VZ200 is powered up, before this type of space-reserved program can be used.

It is best to reserve more space than you actually think you'll need (so that if you think you'll need 1K, reserve 2K space). This is because once the pointers have been modified, and program statements are inserted, no further modification of pointer values is possible for that particular program.

METHOD TWO

This method assigns a space for the machine code program between the BASIC text and the variables area by moving the end of the text pointer backward. This method is simpler to use than the first one we described. All you have to do is to move the end of the BASIC text

pointer downwards in immediate mode or in program mode. For example, if you want to move the end of BASIC pointer to 7D00 H, just type the following statement as the first line of your program:

```
10 POKE 30969,0: POKE 30970,125
```

Programs can now be saved, loaded and run as usual. However, the size of the BASIC program should be estimated before setting the new pointer value when using this approach. This is because the machine code program may need relocation to avoid the BASIC statements and the machine code program overlapping.

Jim Rowe

MAKING MUSIC WITH YOUR VZ-200

The instruction book makes it fairly clear how you can get the SOUND command to operate on your computer. However, apart from showing you a couple of tunes, it goes no further.

In this article, we'll show you how to turn your computer into an organ (after a fashion). As well as demonstrating that, the article should give you a

number of ideas of ways you can develop quite complex programs from a simple starting point.

Clear your computer's memory with NEW, then enter the following program:

```
10 REM VZ PIANO 1
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 16,1
50 IF C$="X" THEN SOUND 18,1
60 IF C$="C" THEN SOUND 20,1
70 IF C$="V" THEN SOUND 21,1
80 IF C$="B" THEN SOUND 23,1
90 IF C$="N" THEN SOUND 25,1
100 IF C$="M" THEN SOUND 27,1
110 IF C$="," THEN SOUND 28,1
120 IF C$="." THEN END
140 GOTO 30
```

This allows you to use the bottom row of keys on the computer as 'piano keys'. That is, to get the note 'C' you press the "Z" key, to get 'D", it is the "X" key you press and so on. Here is a table to show you all the notes:

Press this:	To get this:
Z	C
X	D
C	E
V	F
B	G
N	A
M	B
,	C'

To stop the music at any time, just press the full stop, and the program will terminate.

Enter the program and play round with it for a while, and then return to this article for a discussion on it.

The first thing you'll notice is that, although the sound is quite clear, the computer tends to play each note twice (or even three times) before moving on to the next one. We could put a delay loop in line 130, to see if this improves it. Enter PIANO 11 and then RUN it:

```
10 REM VZ PIANO 11
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 16,1
50 IF C$="X" THEN SOUND 18,1
60 IF C$="C" THEN SOUND 20,1
70 IF C$="V" THEN SOUND 21,1
80 IF C$="B" THEN SOUND 23,1
90 IF C$="N" THEN SOUND 25,1
100 IF C$="M" THEN SOUND 27,1
110 IF C$="," THEN SOUND 28,1
120 IF C$="." THEN END
130 FOR T=1 TO 40:NEXT T
140 GOTO 30
```

You'll find that now, if you're careful and just tap each key, you can get a single, clear note from each key press. But it is not a very satisfactory organ, if only for the fact that it now seems a little sluggish.

As you know, the SOUND command is followed by two numbers. The first one controls the pitch (see page 133 of your BASIC Reference Manual) and the second number, which is separated from the first by a comma, controls the length of the note (see your manual, page 132).

Why don't we try changing the duration of the note. The next version of our program - PIANO 111 - allows you to specify the duration of the note by the number you enter when you first run the program. Enter PIANO 111 and RUN it. When asked to do so, enter a number between 1 and 9. The higher the number, the longer the note will sound.

```
10 REM VZ PIANO 111
20 INPUT "ENTER A NUMBER
                (1 TO 9)";A
25 IF A<1 OR A>9 THEN 20
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 16,A
50 IF C$="X" THEN SOUND 18,A
60 IF C$="C" THEN SOUND 20,A
70 IF C$="V" THEN SOUND 21,A
80 IF C$="B" THEN SOUND 23,A
90 IF C$="N" THEN SOUND 25,A
100 IF C$="M" THEN SOUND 27,A
110 IF C$="," THEN SOUND 28,A
120 IF C$="." THEN END
130 FOR T=1 TO 40:NEXT T
140 GOTO 30
```

You're sure to find this much more satisfactory. Entering a 2 or a 3 seems to give the best results.

There is no reason, of course, why the computer should just play the standard note as you press the key. Modify your program so that it reads like PIANO IV, and you'll see how effective it can sound when playing more than one note per key press.

```
10 REM VZ PIANO 1V
20 INPUT "ENTER A NUMBER (1 TO 9)";A
25 IF A<1 OR A>9 THEN 20
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 16,A:SOUND 4,A
50 IF C$="X" THEN SOUND 18,A:SOUND 6,A
60 IF C$="C" THEN SOUND 20,A:SOUND 8,A
70 IF C$="V" THEN SOUND 21,A:SOUND 9,A
80 IF C$="B" THEN SOUND 23,A:SOUND 11,A
90 IF C$="N" THEN SOUND 25,A:SOUND 13,A
100 IF C$="M" THEN SOUND 27,A:SOUND 15,A
110 IF C$="," THEN SOUND 28,A:SOUND 16,A
120 IF C$="." THEN END
130 FOR T=1 TO 40:NEXT T
140 GOTO 30
```

As you can hear, it is starting to sound quite interesting! Before we get on to improving it further, try it now as PIANO V, with each key press producing three notes.

```
10 REM VZ PIANO V
20 INPUT "ENTER A NUMBER (1 TO 9)";A
25 IF A<1 OR A>9 THEN 20
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 16,A:SOUND 4,A:SOUND 16,A
45 C$=INKEY$
50 IF C$="X" THEN SOUND 18,A:SOUND 6,A:SOUND 18,A
55 C$=INKEY$
60 IF C$="C" THEN SOUND 20,A:SOUND 8,A:SOUND 20,A
65 C$=INKEY$
70 IF C$="V" THEN SOUND 21,A:SOUND 9,A:SOUND 21,A
75 C$=INKEY$
80 IF C$="B" THEN SOUND 23,A:SOUND 11,A:SOUND 23,A
85 C$=INKEY$
90 IF C$="N" THEN SOUND 25,A:SOUND 13,A:SOUND 25,A
95 C$=INKEY$
100 IF C$="M" THEN SOUND 27,A:SOUND 15,A:SOUND 27,A
105 C$=INKEY$
110 IF C$="," THEN SOUND 28,A:SOUND 16,A:SOUND 28,A
115 C$=INKEY$
120 IF C$="." THEN END
140 GOTO 30
```

As you can see, this is quite a radical change, isn't it? Not only does each key press produce three notes, but the notes no longer sound as 'doubles' if you're slow in removing your finger from a key. All those extra C$ = INKEY$ statements have done the trick (and note that line 130) has been deleted, as it is no longer needed.

I was discussing this program with club member Peter Shaw from Balmain, and gave him a copy of it to experiment with. Within two days, Peter was back at my place with his own version of it (which – as you can see – he has called, most modestly, SUPER ORGAN). In this version, all the keys produce single notes. Peter has added two new notes, a high D and an E above that. You stop the program by using the colon (:) key.

Here's Peter's version of the program:

```
10 REM SUPER ORGAN
20 INPUT "ENTER A NUMBER (1 TO 9)";A
25 IF A<1 OR A>9 THEN 20
30 C$=INKEY$
40 IF C$="Z" THEN SOUND 4,A
45 C$=INKEY$
50 IF C$="X" THEN SOUND 6,A
55 C$=INKEY$
60 IF C$="C" THEN SOUND 8,A
65 C$=INKEY$
70 IF C$="V" THEN SOUND 9,A
75 C$=INKEY$
80 IF C$="B" THEN SOUND 11,A
85 C$=INKEY$
90 IF C$="N" THEN SOUND 13,A
95 C$=INKEY$
100 IF C$="M" THEN SOUND 15,A
105 C$=INKEY$
110 IF C$="," THEN SOUND 16,A
115 C$=INKEY$
120 IF C$="." THEN SOUND 18,A
125 C$=INKEY$
130 IF C$=" " THEN SOUND 20,A
135 IF C$=":" THEN END
140 GOTO 30
```

Here, finally, is the 'music' for CLICK GO THE SHEARS, to be played on the Peter Shaw SUPER ORGAN.

```
C C X Z C B , , M N
B B N B C Z X X C X
C C X Z C B , , M N
. , M N B V C X Z , , ,
   (chorus)
. . , M . , space ,
N N M , N N B , C X
X C C C X Z C B , , , M N
N . , M N B V C X Z , , ,
```

Well done, Peter!

We'd be interested in seeing your versions of this piano/organ program. We'll print the best ones in the next issue of your club magazine, VZ 200 INTERFACE.

VINCENT VAN VZ200

This next pair of programs allows you to use your VZ200 as a **sketchpad**, and should help you become acquainted with the use of the modes and color.

The first version uses PRINT@ to draw a design of your choice using the inverse square available from the J key. The second uses SET to produce a picture on the higher resolution which you get by going into MODE 1. In both programs, you control the creation of the picture using the keys with arrows on them in the bottom right hand corner of the keyboard. Press the appropriate key (and do not touch the SHIFT key) and the line will move in the direction you indicate.

When you run the first program (MODE 0 SKETCHER) you'll be asked to enter two numbers (which are entered with a comma between them as 7,1). The first number you enter is the color in which the picture is drawn, and the second is the background color (see page 137) of your manual.

With the second program, you just enter one color (also explained on page 137).

This will be clear when you run the programs. The other possible entries you can make when the program is underway are as follows:

C - copies picture to the printer (Seikosha GP-100 or GP-100A)

R - run the program again from the beginning

N - move your cursor back to the start position

E - freeze the picture

S - stop the program

```
10 REM MODE 0 SKETCHER
20 INPUT A,B
30 CLS
40 COLOR A,B
50 Y=0
60 X=0
70 C$=INKEY$
80 IF C$="," AND X<30  THEN X=X+1
90 IF C$="M" AND X>0 THEN X=X-1
100 IF C$="." AND Y>0 THEN Y=Y-1
110 IF C$=" " AND Y<15THEN Y=Y+1
115 PRINT@ (32*Y+X)," ";
120 PRINT@ (32*Y+X),"■";
```

```
130 IF C$="C" THEN COPY
140 IF C$="R" THEN RUN
150 IF C$="N" THEN 50
160 IF C$="E" THEN 1000
170 IF C$="S" THEN END
180 GOTO 70
1000 GOTO 1000
```

```
10 REM MODE 1 SKETCHER
20 INPUT A
30 MODE (1)
40 COLOR A
50 X=0
60 Y=0
70 C$=INKEY$
80 IF C$="," AND X<127 THEN X=X+1
90 IF C$="M" AND X>0 THEN X=X-1
100 IF C$="." AND Y>0 THEN Y=Y-1
110 IF C$=" " AND Y<63THEN Y=Y+1
120 SET(X,Y)
130 IF C$="C" THEN COPY
140 IF C$="R" THEN RUN
150 IF C$="N" THEN 50
160 IF C$="E" THEN 1000
170 IF C$="S" THEN END
180 GOTO 70
1000 GOTO 1000
```

BENCHMARKS

If you missed Tim Hartnell's review of the VZ200 in the April 1983 issue of AUSTRALIAN PERSONAL COMPUTER, you would have missed the good news on how it performed carrying out the Benchmark tests (which test the speed of the computer's arithmetic and other functions) in comparison with the VIC-20 and the Spectrum. Here, with the kind permission of A.P.C., are the results of the Benchmark tests, reprinted from that review.

The standard eight Benchmark tests were applied and produced the following results:

BM1 loop 1.5 seconds
BM2 loop/addition 6.7 seconds
BM3 loop/addition/arithmetic 17 s.
BM4 loop/add./arith./numbers 17.5 s.
BM5 as above + subroutine 19 s.
BM6 as above + dim/inner loop 31 s.
BM7 as above + fill array 47 s.
BM8 trig. functions 72 s.

The average was 26.5 seconds. Comparing these with the VIC-20, we find that they are very close, with the VIC's average time of 28.7. However, they are significantly faster than the Spectrum, coming in with an average of 58.5 for the eight Benchmarks. As Dick Pountain pointed out in A.P.C. in November, 1982, the result of the Benchmarks test does not necessarily prove very much, although the results are interesting.

IN ENGLAND IT'S THE TEXET

As you can see from this clipping, the VZ200 appears in disguise in the UK, as the TEXET 8000.

New Low Priced Colour Computer

Texet, who were the first UK company to produce a pockket calculator in 1971, have achieved another major breakthrough with the introduction of their new easy to use TX8000 colour computer, which will be available from March, and is aimed at the Home Computer Market. This exciting new machine, at £98, represents a substantial price breakthrough in micro-processing technology, being manufactured by o... of the foremost manufacturers of chip leisure products in ...

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ELECTRONICS & COMPUTING
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PACKAGED SOFTWARE ARRIVES!

Have you been waiting impatiently for the promised VZ-200 packaged software to appear? Your wait is over -- the first batch has arrived. Here's the lowdown:

GAMES

MATCHBOX: This one's a real memory tester. Behind the letters on a grid are pairs of symbols, but you can only see one at a time. Can you remember which letters have which pairs behind them? Good colour graphics and sound effects. X-7231

POKER: Straight draw poker -- just you and the computer. You can bet, raise, call, bluff and fold, just like the real game. But watch your expression -- the computer can tell your cards just from the look in your eyes! X-7232

HANGMAN: This well-known word game hardly needs any introduction. If you can't guess the mystery word (8 letters), the figure on the screen is 'hung' -- and that means you lose! Good fun, and it helps the kids with spelling and vocabulary. X-7233

SLOT MACHINE/KNOCK OFF/RUSSIAN ROULETTE: Three well-known games to amuse the kids (and quite a few adults as well!). Slot machine pits you against a one-arm bandit, but doesn't gobble up your 20c pieces. Knock-off is also a game of chance, but it also improves your maths skills. Russian roulette is a little like the real thing, except that when you lose you don't lose your head as well! X-7234

BLACKJACK: Ever wanted to visit Las Vegas, the city that never sleeps? This is the next best thing -- or a good way to practice if you're planning a trip there. Blackjack or '21' is the game, and the screen shows all cards. From 1 to 4 players. X-7235

CIRCUS: Under the Big Top, acrobats perform death-defying stunts jumping onto the see-saw from a tall platform. When one hits the see-saw, his companion is sent up in the air to try and puncture some of the floating balloons. Your job is to keep moving the see-saw to the right positions to keep it all happening. It's a real challenge! Good graphics and sound. X-7236

BIORHYTHM/PAIR MATCHING/CALENDAR: Three programs, all based on dates. Biorhythm calculates your three primary body rhythms, and tells you when you're most likely to feel and do well. Pair Matching compares someone else's biorhythms with your own, and tells you how compatible you are. Calendar takes any two dates, and tells you not only which day of the week they fell (or will fall) on, but also the difference between them in both days and years. Fascinating! X-7237

EDUCATIONAL

STATISTICS I: An introduction to the basic principles of statistical analysis, used widely in many of the sciences. Explains about the Mean, Variance, Standard Deviation, different types of Distribution, etc. Gives you the opportunity to test your knowledge by working out examples. X-7251

STATISTICS II: Following on from the tutorial material given in Statistics I, this program deals with more advanced concepts: Tests of statistical significance, Student's T-test, the Chi-Square test, correlation coefficients and so on. Excellent for students in psychology and the other behavioural sciences! X-7252

MATRIX: Working out mathematical matrices can be a real chore. This program lets you add them, subtract

them, multiply and divide them very easily, and also helps you get more skill in handling them -- by practice. X-7253

TENNIS LESSON/GOLF LESSON: Challenge your computer to a game of tennis or golf. It plays strictly according to the rules, so even if you don't win, you can learn quite a lot about the games. Of course the computer can't tell you what's wrong about your posture or your swing -- but what do you want for this low cost? X-7254

FINANCIAL

PORTFOLIO MANAGEMENT: Like to invest in the share market? This program will help you to analyse and manage your portfolio for maximum profit and minimum risk. It gives you a working model of your portfolio, so you can see the likely effects of any proposed changes. X-7261

DISCOUNTED CASH FLOW ANALYSIS: An ideal working tool for executives, accountants and project managers. It provides a model for making capital budgeting decisions and minimising an investment without prejudicing a project's liquidity. Uses Nett Present Value (NPV) and Internal Rate of Return (IRR). X-7262

FINANCIAL RATIO ANALYSIS: A program for the professional accountant, investment advisor or small business owner who doesn't want to stay small. Lets you work out comparisons of projects, companys or other investments on the basis of liquidity, leverage, management and profitability. X-7263

I'm told that each of these software cassettes is selling for the common price of $12.50, and that they're available from all Dick Smith Stores.

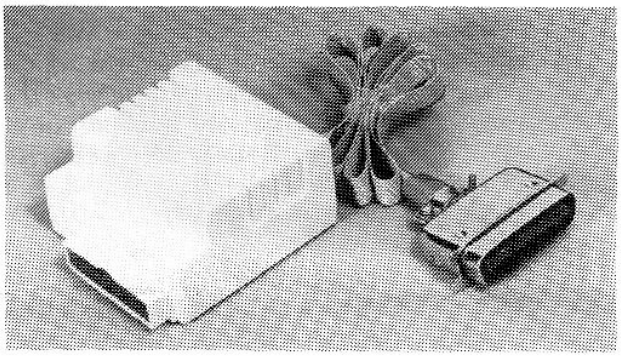
VZ200 PRINTER INTERFACE

If you're like most of us, it won't be long before you want to get your VZ200 to print out both data and programs on paper. Here's where the X-7210 Printer Interface Module will come into your computing picture. It plugs straight into the back of your computer, alongside the 16K RAM Expansion Module. All you have to do is unscrew the two small screws holding on the cover plate labelled "Peripheral", remove the plate and push the Interface straight in.

The Interface comes complete with a ribbon cable ending in a standard Amphenol 36-way plug, and it will work with just about any standard 'Centronics'-type parallel printer. The Seikosha GP-100 printer sold by Dick Smiths is especially suitable, because it will handle the VZ200's inverse characters and low-res graphics automatically.

The X-7210 Printer Interface sells for only $49.50, and I'm told it will be reaching Dick Stores by the time you read this issue. The Seikosha GP-100 printer (X-3250) is currently selling for $395, which must make it about the cheapest model around.

NOTE: The VZ200 and its Printer Interface send line feeds (ASCII code



0A) as well as carriage returns at the end of each printed line, so you need to disable the 'auto-LF' function if your printer has one. Otherwise you'll get double line spacing, and use twice as much paper! With most printers this is simply a matter of flipping a DIP switch inside, or fitting a small wire link.

HOW TO WRITE TO ME

Please send your programs and other contributions to me at the address below. Don't forget to let me know if you're starting up a local branch of the VZ-200 Users' Club in your area -- we'll be happy to publicise it for you.

All correspondence to:

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P.O. Box 321,
NORTH RYDE, NSW 2113